IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Applicant:	Joshua Nemeth
Serial No:	09/857,133
Assignee:	Note Printing Australia Limited
Filed:	July 5, 2000
For:	Security Document with Raised Intaglio Printed Image
Examiner:	Tamara L. Dicus
Group Art Unit:	1774

Honourable Commissioner of Patents and Trademarks
Washington DC 20231

DECLARATION OF WAYNE KEVIN JACKSON

I, Wayne Kevin JACKSON, of 77 McRae Road, Rosanna, Victoria 3084, Australia, do solemnly and sincerely declare as follows:

1. I am employed as Senior Research Scientist by Note Printing Australia Limited. since March 1981 and my duties have included research and development into security documents, particularly banknotes, and various security devices and printing inks for use in the manufacture of security documents, particularly banknotes made from polymeric substrates.

2. I am qualified as an Electrical Engineer and I have a Diploma of Science in Engineering from University of California Berkeley. I have been employed by Note Printing Australia Limited since March 1981 and my duties have included research and development into security documents, particularly banknotes, and various security devices and printing inks for use in the manufacture of security documents, particularly banknotes made from polymeric substrates.

3. I am one of the inventors of US Patent Application Serial No. 09/806,966 which has a filing date of 5 June 2000 and which is entitled "Security Document or Device having an Intaglio Contrast Effect". This patent application proceeded to issuance as a patent on 12 August 2003 as US Patent No. 6,605,338. A copy of the US Patent is attached to this Declaration as Exhibit 1.

4. The invention of US Patent No. 6,605,338 is a security document or device having a substrate, a smooth highly reflective layer applied to the substrate and a raised printed image of a brightly coloured ink applied to the reflective layer. The independent claims of the US patent specify that the highly reflective layer has a specular reflectance percentage of at least 60 (reflectivity of at least 60 gloss units), and that the brightly coloured ink is "of a hue having a chroma value of at least 30 chroma units and/or a lightness of at least 50 lightness units".

5. The visual effect produced by the raised printed image of brightly coloured ink on the highly reflective layer or patch is a contrast effect, and because a coloured intaglio ink is normally used to produce lines or dots forming the image and having a height of at least 10 μm, the effect is called an "intaglio contrast effect". When the raised printed image on the highly reflective patch is viewed from a viewing direction substantially perpendicular to the surface of the substrate, the highly reflective patch forms a background which is very bright, e.g. a gold colour when a gold metallic ink is used. At this perpendicular viewing angle, the colour (e.g. red) of the raised printed image formed by the highly coloured ink appears dull in contrast to the bright gold background of the highly reflective patch. When the viewing angle changes from the perpendicular to more oblique viewing angles, e.g. upon tilting the document, the reflective patch becomes duller and the raised printed image formed by the highly coloured intaglio ink becomes brighter

and more enhanced compared to the duller reflective patch. It should, however, be appreciated that the raised intaglio printed image is visible at all viewing angles, and it is the relative contrast of the image with the highly reflective background which changes when the viewing angle changes.

6. I am familiar with the specification and claims of US Patent Application 09/857,133 of my company, Note Printing Australia Limited. I understand that the invention claimed in that application involves the application of a raised print image formed from a transparent or translucent ink to a smooth, highly reflective layer applied to a substrate.

7. A transparent or translucent intaglio ink as described in US Patent Application No. 09/857,133 is quite different from the highly coloured intaglio ink used in US Patent No. 6,605,338. A clear transparent ink has no colour, i.e. a zero chroma value, and even a coloured translucent ink would only have very low chroma and lightness values, well below those specified in US Patent No. 6,605,338. Indeed I note that page 7, lines 12-19 of US Patent Application No 09/857,133 recite:

"The transparent intaglio ink has the following different properties to other stand intaglio inks:
Higher resin content (about 40-55% wt)
No pigments for clear translucent
Reduced pigments for coloured translucent (<2% wt)
No opacifying agents
Use of transparent filter (such as commercially available "Transpafill" and "Aerosils"), with a high loading (about 20 – 30% wt)."

I consider that a coloured translucent ink pigments of less than 2% by weight would have a very low chroma value, well below 30 chroma units, and a very low lightness value, well below 50 lightness units.

8. I also note that the visual effect produced by the raised printed image of transparent or translucent ink in US Patent Application No. 09/857,133 is quite different from the visual effect produced by the raised printed image highly coloured ink of US Patent No. 6,605,338. The visual effect of Application No. 09/857,133 is a disappearing effect in which the raised printed image produced by the transparent or translucent ink is only very visible at a small range of viewing angles around a viewing angle which corresponds to the angle of incidence of a light print source. This is called "a window of high reflection" in the specification and claims of US Patent Application No. 09/857,133, because the reflective patch appears highly reflective, i.e. very bright within this range of angles and relatively dull outside the window of high reflection. The raised printed lines or dots of transparent or translucent ink cause a slightly specular scattering of light when the document is viewed within the window of high reflection, and this produces a contrast between the relatively coherent reflections from the highly reflective patch, so that the raised printed image is very visible. However, when the patch including the raised printed image is viewed at angles outside the window of high reflection, the image effectively disappears because the slightly specular reflectance of the translucent ink does not contrast with the dull appearance of the background layer of the highly reflective patch.

9. Therefore, the disappearing raised printed image of transparent or translucent ink of Patent Application No. 09/857,133 is quite different visually from the raised printed image of brightly coloured ink on a highly reflective background as disclosed in US Patent No. 6,605,338 which is visible at all viewing angles with different contrasting effects of brightness, e.g. dull red on a bright gold background when viewed at a substantially perpendicular viewing angle, and bright red on a dull gold background when the viewing

angle changes to more oblique angles from the perpendicular.

10. I therefore consider that the invention of US Patent Application No. 09/857,133 is patentably distinct over the disclosure and claims of US Patent No. 6,605,338, not only in respect of the use of a transparent or translucent ink having very low chroma and lightness values well below 30 chroma units and 50 lightless units, but also having regard to the quite different visual effects produced by the respective inventions.

I hereby declare that all statements made herein of my own knowledge, are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such wilful false statements may jeopardise the validity of the application, and any patent issuing thereon, or any patent to which this verified statement is directed.

Declared at Craigieburn this 3rd day of November 2003.

Wayne Kevin JACKSON